

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A process for preparing a micro-array for analysis of DNA which comprises the steps of:

spotting onto a solid carrier in a predetermined area thereof in which a number of ~~reactive groups~~ vinylsulfonyl groups are fixed an aqueous solution which contains a thickening agent comprising a water-soluble polymer and which has a viscosity of 2 to 50 mPa's and probe molecules having a ~~group reactive with the reactive groups of the carrier to produce covalent bonding, the thickening agent being incorporated in an amount to increase viscosity of the solution to a predetermined value~~ an amino group and the probe molecules being selected from the group consisting of nucleic acid fragments, oligonucleotides and peptide nucleic acids;

spotting onto the solid carrier in an area other than the area in which the aqueous solution was spotted and in which ~~the same reactive groups~~ vinylsulfonyl groups are present fixed an aqueous solution which contains a thickening agent comprising a water-soluble polymer and which has a viscosity of 2 to 50 mPa's and probe molecules having a ~~group reactive with the reactive groups of the carrier to produce covalent bonding, the thickening agent being incorporated in an amount to increase viscosity of the solution to a predetermined value~~ an amino group and the probe molecules being selected from the group consisting of nucleic acid fragments, oligonucleotides and peptide nucleic acids;

incubating the solid carrier having the spotted aqueous solutions on the surface ~~to cause thereby causing~~ reaction for producing the covalent bondings between the vinylsulfonyl groups and the amino groups; and

washing the surface of the solid carrier with an aqueous medium to remove all of the thickening agent from the surface of the solid carrier, thereby preparing the micro-array.

2. (cancelled)
3. (cancelled)
4. (cancelled)

5. The process of claim [[4]] 1, wherein the vinylsulfonyl group is provided to the solid carrier by reacting a divinylsulfone compound with a amino group which has been previously placed on the solid carrier.

6. (original) The process of claim 1, wherein the aqueous medium for washing the solid carrier contains a surface active agent.

7. (currently amended) The process of claim 1, wherein each of the aqueous solutions has a viscosity ~~essentially~~ identical to each other.

8. (original) A micro-array for analysis of DNA which is prepared by claim 1.

9. (currently amended) A process for preparing a micro-array for analysis of DNA which comprises the steps of:

spotting onto a solid carrier in a predetermined area thereof in which a number of amino groups ~~electrically chargeable in an aqueous medium~~ are fixed an aqueous solution which contains a thickening agent comprising a water-soluble polymer and which has a viscosity of 2 to 50 mPa's and probe molecules having a phosphoric acid group ~~electrically chargeable in an aqueous medium to produce electrostatic bonding with the electrically chargeable groups of the carrier, the thickening agent being incorporated in an amount to increase viscosity of the solution to a predetermined value~~ and the probe molecules being selected from the group consisting of nucleic acid fragments, oligonucleotides and peptide nucleic acids;

spotting onto the solid carrier in an area other than the area in which the aqueous solution was spotted and in which ~~the same electrically chargeable groups~~ amino groups are ~~present~~ fixed an aqueous solution which contains a thickening agent comprising a water-soluble polymer and which has a viscosity of 2 to 50 mPa's and probe molecules having a group ~~electrically chargeable in an aqueous medium to produce electrostatic bonding with the electrically chargeable groups of the carrier, the thickening agent being incorporated in an amount to increase viscosity of the solution to a predetermined value~~ phosphoric acid group and the probe molecules being selected from the group consisting of nucleic acid fragments, oligonucleotides and peptide nucleic acids;

incubating the solid carrier having the spotted aqueous solutions on the surface ~~to cause~~ , thereby causing reaction for producing the ~~covalent~~ electrostatic bondings between the amino groups and the phosphoric acid groups; and

washing the surface of the solid carrier with an aqueous medium to remove all of the thickening agent from the surface of the solid carrier, thereby preparing the micro-array.

10. (cancelled)

11. (cancelled)

12. (cancelled)

13. (currently amended) The process of claim ~~[[12]]~~ 9, wherein the amino group is provided to the solid carrier by treating the solid carrier with an aminosilane coupling agent or a polycation compound.

14. (original) The process of claim 9, wherein the aqueous medium for washing the solid carrier contains a surface active agent.

15. (currently amended) The process of claim 9, wherein each of the aqueous solutions has a viscosity ~~essentially~~ identical to each other.

16. (currently amended) A micro-array for analysis of DNA which is prepared by claim ~~[[4]]~~ 9.

REMARKS

As a result of the foregoing amendment, the claims have been amended so as to avoid the various formal objections and rejections. Thus, the various terms objected to by the examiner or on which rejections were based as set forth in paragraphs 4 and 5 of the office action no longer appear in the claims, these rejections have thus been obviated and should be withdrawn. In addition, claim 1 has been modified so as to include the recitation of claims 2, 3 and 4. Claim 9 has been modified to include the limitations of claims 10, 11 and 12. Accordingly, claims 2-4 and 10-12 have been cancelled.

In as much as the rejections under 35 USC 102(e) set forth in paragraphs 6, 7, 8 and 9 were not applied to claim 2, it is clear that the rejections no longer apply to claims 1 and 9 as amended and the rejections should be withdrawn.

Similarly, as the rejection in claim 9 was not applied to claim 4 and since claim 1 now includes the limitation of claim 4, the rejection of claim 1 as amended as set forth in paragraph 9 has also been obviated. Similarly, this rejection was not applied to claim 12, the limitation to which have been incorporated into claim 9 and accordingly this rejection is also untenable and should be withdrawn. It is further clear that because of the amendment claims 13, 14 and 15 are also now allowable. It is noted that claims 13 and 15 have been amended to be dependent upon claim 9. However, in this regard, it is noted that while the examiner asserts that inherently, the thickening agent and water-soluble polymer namely, glycerol, will also be washed away to some extent, glycerol is a water-soluble compound but not a polymer. Accordingly, the Van Ness, et al reference cited by the examiner does not teach the use of a thickening agent containing a water-soluble polymer in the nucleic acid spotting procedure.

Submitted herewith are certified copies of the priority documents. Accordingly, applicants have properly perfected the claim to priority for the present application.

Accordingly, the foregoing modification to the claims renders them allowable over the art of record and since all of the formal rejections have also been obviated, it is submitted that this application is in condition for allowance and favorable reconsideration and prompt Notice of Allowance are earnestly solicited.

Respectfully submitted,

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